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Baarman et al.

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(54) **INDUCTIVE POWER SUPPLY WITH DUTY CYCLE CONTROL**

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H01F 27/42 (2006.01)

(52) **U.S. Cl.** **307/104**

(58) **Field of Classification Search** 307/104;
713/300, 320; 320/108

See application file for complete search history.

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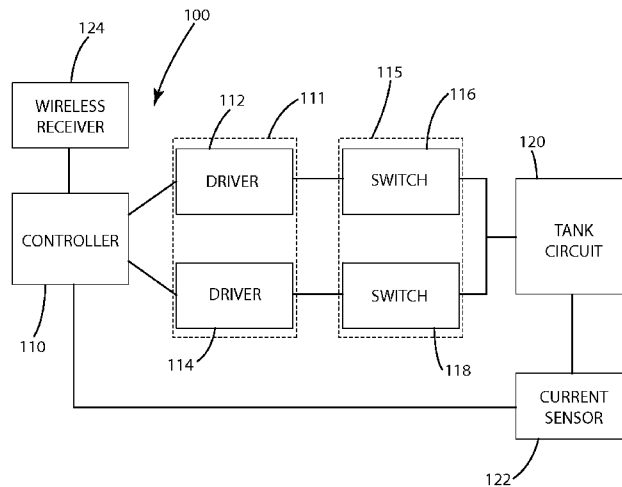
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(57) **ABSTRACT**

An inductive power supply that maintains resonance and adjusts duty cycle based on feedback from a secondary circuit. A controller, driver circuit and switching circuit cooperate to generate an AC signal at a selected operating frequency and duty cycle. The AC signal is applied to the tank circuit to create an inductive field for powering the secondary. The secondary communicates feedback about the received power back to the primary controller. The power transfer efficiency may be optimized by maintaining the operating frequency substantially at resonance, and the amount of power transferred may be controlled by adjusting the duty cycle.

35 Claims, 10 Drawing Sheets



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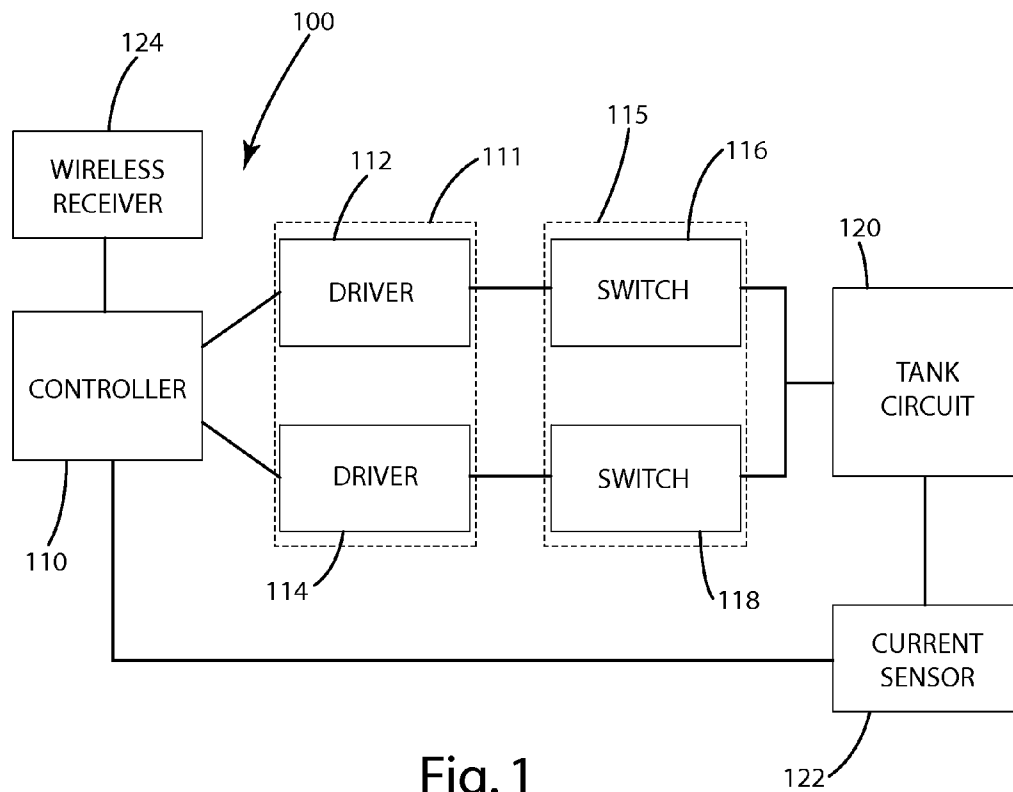


Fig. 1

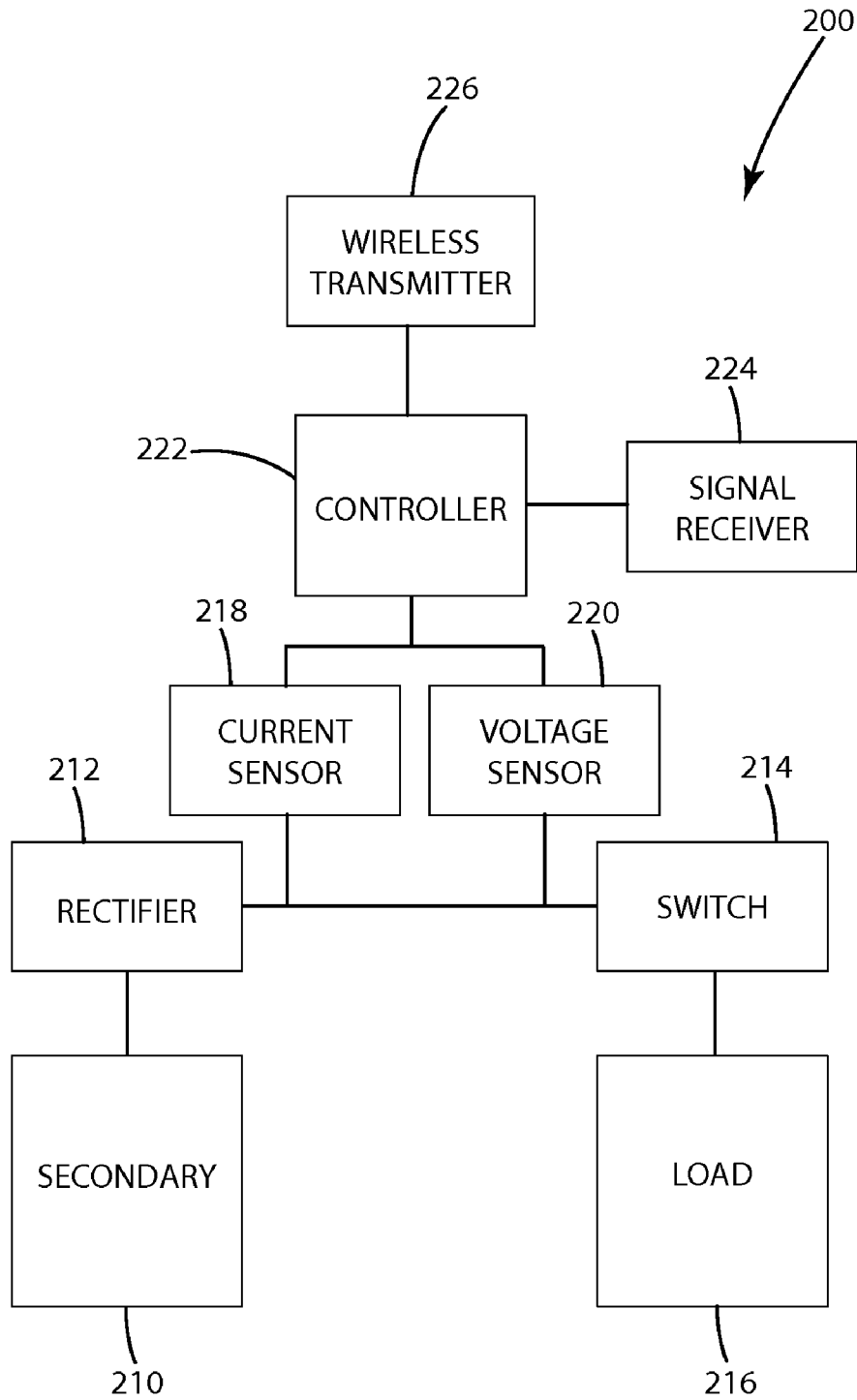


Fig. 2

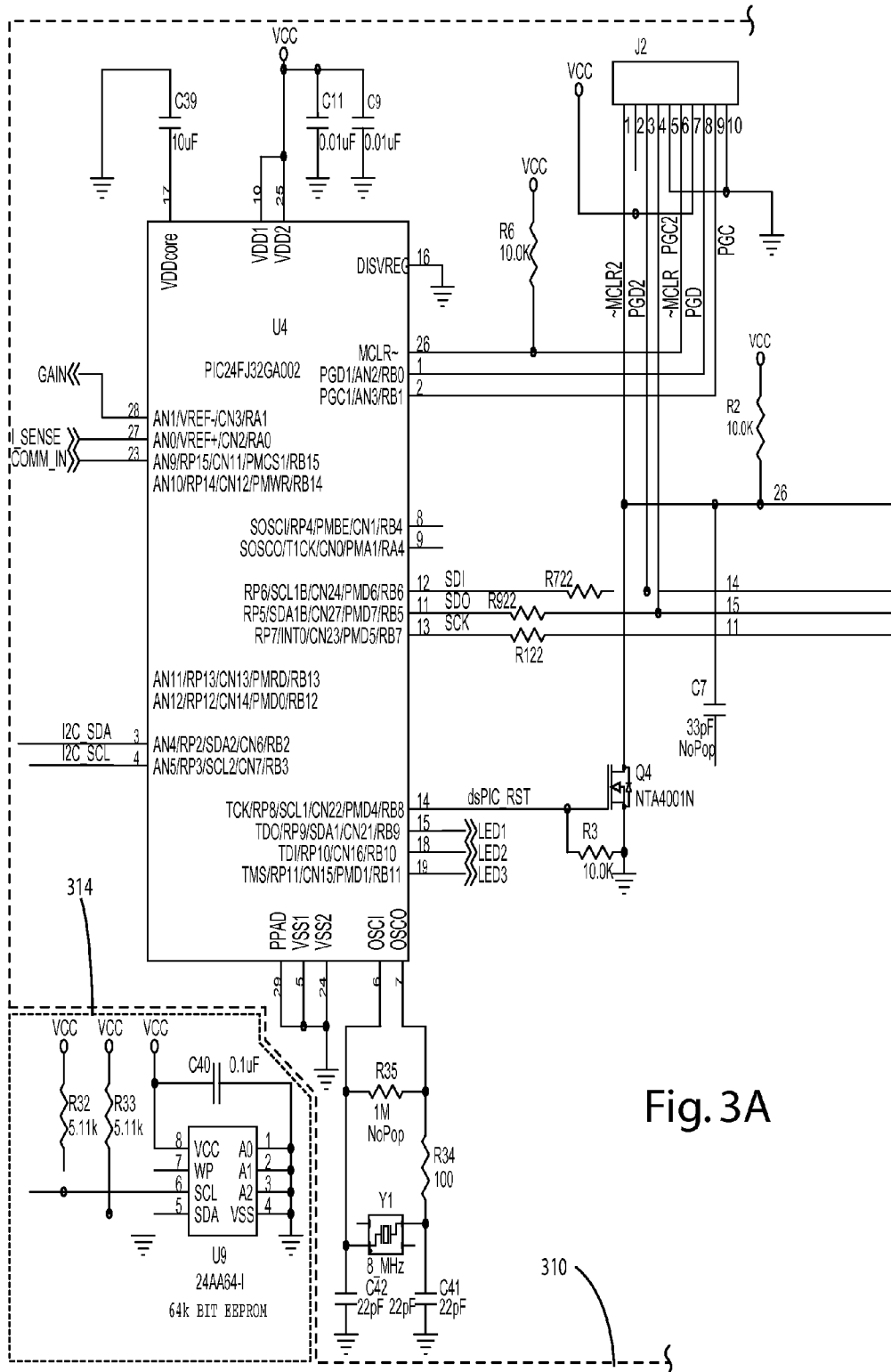


Fig. 3A

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